

INDOORS ✿ GRADES 2-4 ✿ FALL, WINTER, SPRING ✿ ACTIVITY, PROJECT



# Room to Live

## DESCRIPTION

Students plant seeds in <sup>the garden</sup> pots at different densities and measure root and stem growth.

## OBJECTIVE

To discover the effects of crowding on the growth of plants.

## MATERIALS

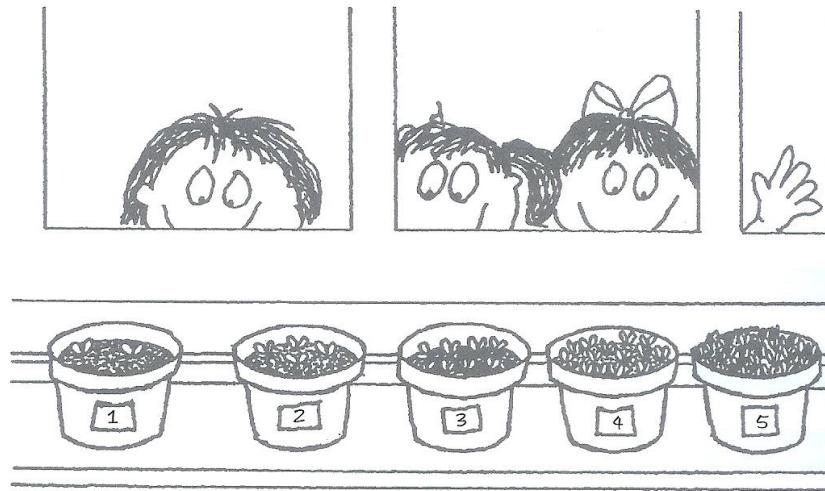
- ✿ Observation Sheet, 1 per group, page 416
- ✿ 5 4-inch (10 cm) pots per group
- ✿ potting soil
- ✿ 62 radish seeds per group
- ✿ labels
- ✿ science journals

## CLASS DISCUSSION

How much room do you need to live? If you grew up in a room 3'x3' (1x1 m), do you think it would be easy to grow up to be a basketball player? Do plants need room to grow, too? What differences do you think we would find if we planted seeds in a crowded pot and in one where the seeds had plenty of room to grow? (*Record predictions.*) We are going to plant radish seeds in five different pots. Which pot do you think will have the plant with the longest roots? Shortest roots? Largest leaves? Smallest leaves? Longest stems? Shortest stems? Most leaves? Biggest radish? Smallest radish? (*Record all predictions.*)

## ACTION

1. If materials allow, divide the class into groups so that each group can carry out a whole experiment.
2. Fill small pots with soil and label them with numbers. Then have students sow radish seeds, equally spaced, in each pot. List the following amounts on the board:
  - ✿ Pot 1: 2 seeds
  - ✿ Pot 2: 4 seeds
  - ✿ Pot 3: 8 seeds
  - ✿ Pot 4: 16 seeds
  - ✿ Pot 5: 32 seeds
3. Place pots in a sunny location and have students keep them watered as the seeds grow. Keep the soil moist (but not soggy) in all of the pots.
4. Have students observe the pots carefully to see whether the radishes in some pots are growing better than others, noting whether some are tall and spindly, others stunted, and so on. Have students draw pictures in their science journals of the plants in each pot every few days.



5. When the radishes are fully grown, have students carefully pull them out of the pots, making sure to keep each pot separate. Have them choose the largest plant from each pot and record the data in their journals.
6. Compare students' results with their predictions.
7. Have a radish party with the results!

**WRAP UP**

What did you test for in this experiment? Did crowding seem to affect radish growth? Why do you think some of the plants had longer stems? (*to try to get to the light*) Why did some plants have longer roots? (*more room to spread*) Bigger leaves? Bigger radishes?



# Observation Sheet

<p>Date: _____</p> <p><u>Observations:</u></p>	<p>Date: _____</p> <p><u>Observations:</u></p>
<p>Date: _____</p> <p><u>Observations:</u></p>	<p>Date: _____</p> <p><u>Observations:</u></p>